THE COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION

16 February 1990

John Shawcross, Director
Capital Engineering and Development Dept.
Waterworks Division
Massachusetts Water Resources Authority
100 First Street
Boston, MA 02129

Dear Mr. Shawcross:

The Water Resources Commission has reviewed the Sudbury Aqueduct rehabilitation project with respect to the Interbasin Transfer Act (MGL, C.4, ss 8B) and regulations (313 CMR 4.00). We note the following:

1. At the present time, the MWRA provides water to its customers in the metropolitan Boston area by means of a series of west-to-east tunnels and aqueducts.

STRUCTURE	PROPOSED CHANGES
Wachusett Reservoir	NONE
Cosgrove Tunnel	NONE
Southborough Tunnel	Build second tunnel to parallel existing tunnel
a. Weston Aqueduct	NONE
b. Hultman Aqueduct	Rehabilitate Sudbury Aqueduct to parallel Hultman

The Weston Aqueduct, with an average capacity of 75 mgd, serves the low pressure areas of the system. The Hultman Aqueduct, with an average capacity of 276 mgd serves the high pressure areas.

This decision deals with the Sudbury Aqueduct rehabilitation only. New construction to parallel the Southborough Tunnel will be considered as a separate issue.

2. The purpose for the reconstruction of the Sudbury Aqueduct is to reduce stress on the Hultman Aqueduct, and to act as a backup if the Hultman Aqueduct is ever out of service. The original Sudbury Aqueduct conducted water from the Framingham Reservoir system to the Chestnut Hill Reservoir by means of gravity flow. The reconstructed Sudbury Aqueduct would be pressurized and would bypass the Framingham Reservoir and carry water directly from the Cosgrove Tunnel-Southborough Tunnel connection to the MWRA system.

3. Once the reconstructed Sudbury Aqueduct is put into operation, the Sudbury and Hultman Aqueducts will operate simultaneously. The Hultman Aqueduct will normally carry 135 mgd and the Sudbury Aqueduct will normally carry 90 mgd. The balance of the average day demand on the system will be provided by the Weston Aqueduct and MWRA's other facilities, which are already in operation.

4. If the Hultman Aqueduct is taken out of operation, the proposed Sudbury Aqueduct could convey up to 200 mgd. In order to provide the balance of the average day demand during this emergency, the flow through the Weston Aqueduct would be increased by 30 mgd for delivery via Spot Pond, which would be regulated to handle this additional volume. Conservation restrictions would also be instituted.

5. Although the combined maximum capacity of the Hultman and Sudbury Aqueducts would be 500 mgd, in practice this capacity could not be reached without emptying the distribution reservoir. At the present time, the Norumbega Reservoir acts as the pressure control for the Hultman Aqueduct, thus regulating the flow. It is normally kept at an elevation of 272 feet. Once the Sudbury Aqueduct is operational, Norumbega's elevation will be raised 15 feet to provide the extra pressure differential. A set operating range for the Wachusett Reservoir and its associated stilling pool and Norumbega Reservoir will be established to keep the normal flows through the Hultman Aqueduct at 135 mgd and through the Sudbury Aqueduct at 90 mgd.

6. The capacity of Cosgrove Aqueduct, the direct connection to the Wachusett Reservoir of this tunnel/aqueduct system, will not be changed.

It is the express intention of the Interbasin Transfer Act that any increase over the present rate of interbasin transfer be subject to Water Resources Commission approval. However, section 4.02(j) of the Interbasin Transfer regulations (313 CMR 4.00) exempts projects whose "sole purpose is to provide redundancy, provided that any increase in capacity cannot be used to increase the ability to transfer water, on an annualized basis...". Based on the information provided by the MWRA, stated above, the Sudbury Aqueduct rehabilitation project is not subject to the Interbasin Transfer Act and will not require approval from the Water Resources Commission provided that the combined transfer through the Hultman and Sudbury Aqueducts does not exceed the current hydraulic capacity of the Hultman Aqueduct of 300 mgd on an annualized basis. To assure that this condition is met, an annual report of the volume transferred through this system will be submitted to the WRC. If in the future, this project does result in an increase in capacity, a Special Act of the Legislature, or an additional community joining the MWRA system, it will be subject to Commission approval retroactively.

If you have any questions, please feel free to contact the Commission.

Sincerely,

Elizabeth Kline
Executive Director

cc: Ann Gannett, WSCAC
Eileen Simonson, WSCAC